

SEPTEMBER, 2003

# Analysis of Early Retirement Incentive Program (ERIP)

for the Plymouth County Retirement System



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## TABLE OF CONTENTS

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|  |    |
|--|----|
| Introduction .....                       | 1  |
| Cost Analysis by Governmental Unit ..... | 2  |
| Town of Bridgewater.....                 | 3  |
| Town of Carver .....                     | 4  |
| Town of Hanson .....                     | 5  |
| Town of Plympton.....                    | 6  |
| Town of Rochester .....                  | 7  |
| Town of Wareham .....                    | 8  |
| Bridgewater Housing Authority .....      | 9  |
| Bridgewater-Raynham Regional School..... | 10 |
| East Bridgewater Housing Authority.....  | 11 |
| Middleboro Housing Authority.....        | 12 |
| Onset Fire District .....                | 13 |
| Plymouth County Mosquito Control .....   | 14 |
| Scituate Housing Authority .....         | 15 |
| Wareham Fire District.....               | 16 |
| Whitman Housing Authority .....          | 17 |
| Effect on Funding Schedule .....         | 18 |
| Actuarial Assumptions .....              | 19 |

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# INTRODUCTION

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The Public Employee Retirement Administration Commission (PERAC) is pleased to release our analysis of Chapter 116 of the Acts of 2002, *An Act Providing for Local Government Workforce Reduction Through an Early Retirement Incentive Program (ERIP) for Certain Employees* for the Plymouth County Retirement System. The ERIP was adopted by the Town of Bridgewater, the Town of Carver, the Town of Hanson, the Town of Plympton, the Town of Rochester, the Town of Wareham, Bridgewater Housing Authority, Bridgewater-Raynham Regional School, East Bridgewater Housing Authority, Middleboro Housing Authority, Onset Fire District, Plymouth County Mosquito Control, Scituate Housing Authority, Wareham Fire District and Whitman Housing Authority. Section 1 of the law directed PERAC to complete an analysis of the costs and liabilities attributable to the additional benefits payable in accordance with the Act and submit a report to the board by December 31, 2003.

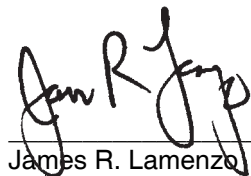
The law provides that retirement allowances of members who participated in the ERIP be determined by adding up to 5 years to the member's age and/or creditable service (any combination in full years up to a maximum of 5 years). A member's enhanced benefit cannot exceed 80% of the average rate of annual compensation used in his/her calculation. Members retiring under the program had effective dates of retirement between June 21, 2002 and December 31, 2002.

This study was based on active member data as of December 31, 2001, and additional data for retirees who were eligible for and elected the ERIP. All data was supplied by the board. We previously reviewed the December 31, 2001 data as part of the 2002 data submission process. We reviewed each member's data as both an active and retired member for reasonableness and consistency.

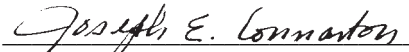
We used the investment return assumption used in the most recent actuarial valuation report. For all other assumptions, we used the standard PERAC assumption set for performing actuarial valuations as of January 1, 2002. These assumptions are generally the same as the assumptions used in your last actuarial valuation performed as of January 1, 2002. The assumptions are shown at the back of this report.

We believe this report represents an accurate appraisal of the costs and liabilities of the ERIP for the retirement system. This analysis was performed in accordance with generally accepted actuarial principles and practices relating to pension plans. In our opinion, the actuarial assumptions used in this report are reasonable, related to plan experience and expectations, and represent our best estimate of anticipated experience.

Respectfully submitted,  
Public Employee Retirement Administration Commission



James R. Lamenza  
Member of the American Academy of Actuaries  
Associate of the Society of Actuaries  
Enrolled Actuary Number 02-4709



Joseph E. Connarton  
Executive Director

Dated: September 2, 2003

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# COST ANALYSIS BY GOVERNMENTAL UNIT

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## Methodology

The results of our analysis for each governmental unit that accepted the ERIP are presented on the following pages. Participating units had the option to limit the number of years and/or the number of members eligible to retire under the program. Such limitations are noted.

Our analysis of the cost of the ERIP consisted of measuring the change in both the actuarial accrued liability and normal cost before and after the application of the enhanced benefit. The amortization the increase in actuarial accrued liability and the normal cost form the basis of the impact of the ERIP on the plan's funding schedule. These items are discussed below.

## Actuarial Accrued Liability

We measured the increase in actuarial accrued liability due to the incentive for each member who retired under the program. First, we valued the group as active members on January 1, 2002 (including any changes to reflect service adjustments made after January 1, 2002, such as service buy-backs). This calculation determines the liability attributable to the employees who elected the ERIP exclusive of the additional liability associated with the incentive program. These results were then brought forward on an actuarial basis to reflect the estimated accrued liability as of the average retirement date as shown for each governmental unit.

We then valued the same group as retirees after the application of the ERIP. These liabilities were determined as of the average retirement date for each governmental unit.

The accrued liability for the members as retirees including the ERIP less the accrued liability for the members as active employees excluding the ERIP represents the increase in accrued liability due to the ERIP. This increase will be amortized as part of the system's funding schedule and will be a component of the system's annual appropriation. We assumed the amortization of the increase in liability would begin with the FY05 appropriation.

## Normal Cost

The increase in actuarial liability is somewhat offset by a decrease in normal cost. The normal cost, or actuarial cost for the current year for active members, is shown as of January 1, 2002. There is no normal cost for retired members. Any decrease in normal cost for a retiring member would only be expected to last for a few years (the period the member would have remained in active service if the ERIP were not implemented).

## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### Town of Bridgewater – Limited to 20 Employees

| Actives              |          | Retirees               |          |
|----------------------|----------|------------------------|----------|
| Number of Members    | 10       | Number of Members      | 10       |
| Average Service      | 22.3     | Average Age            | 60.0     |
| Average Compensation | \$44,412 | Average Annual Benefit | \$28,613 |

|   | As Actives  | As Retirees |
|---|-------------|-------------|
| Total Regular Compensation                    | \$444,100   | N/A         |
| Total Normal Cost                             | \$49,400    | N/A         |
| Employee Contributions                        | \$27,200    | N/A         |
| Net Employer Normal Cost                      | \$22,200    | N/A         |
| Actuarial Liability (as of November 30, 2002) | \$2,248,600 | \$3,051,700 |

|   |           |
|---|-----------|
| Increase in Actuarial Liability (as of November 30, 2002)             | \$803,100 |
| Amortization of Increase for FY05 (assumed average payment October 1) |           |
| 15 year level basis   | \$103,600 |

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.

## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### Town of Carver

| Actives              |          | Retirees               |          |
|----------------------|----------|------------------------|----------|
| Number of Members    | 16       | Number of Members      | 16       |
| Average Service      | 21.5     | Average Age            | 61.1     |
| Average Compensation | \$39,612 | Average Annual Benefit | \$24,223 |

|  | As Actives  | As Retirees |
|--|-------------|-------------|
| Total Regular Compensation                     | \$633,800   | N/A         |
| Total Normal Cost                              | \$84,400    | N/A         |
| Employee Contributions                         | \$41,900    | N/A         |
| Net Employer Normal Cost                       | \$42,500    | N/A         |
| Actuarial Liability (as of September 15, 2002) | \$3,156,100 | \$4,194,700 |

|   |             |
|---|-------------|
| Increase in Actuarial Liability (as of September 15, 2002)            | \$1,038,600 |
| Amortization of Increase for FY05 (assumed average payment October 1) |             |
| 15 year level basis   | \$136,200   |

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.

## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### Town of Hanson – Limited to 1 Group 4 Employee

| Actives              |          | Retirees               |          |
|----------------------|----------|------------------------|----------|
| Number of Members    | 1        | Number of Members      | 1        |
| Average Service      | 33.3     | Average Age            | 53.9     |
| Average Compensation | \$84,667 | Average Annual Benefit | \$66,263 |

|  | As Actives | As Retirees |
|--|------------|-------------|
| Total Regular Compensation                   | \$84,667   | N/A         |
| Total Normal Cost                            | \$11,000   | N/A         |
| Employee Contributions                       | \$4,000    | N/A         |
| Net Employer Normal Cost                     | \$7,000    | N/A         |
| Actuarial Liability (as of October 15, 2002) | \$532,900  | \$721,800   |

|   |           |
|---|-----------|
| Increase in Actuarial Liability (as of October 15, 2002)              | \$188,900 |
| Amortization of Increase for FY05 (assumed average payment October 1) |           |
| 15 year level basis   | \$24,600  |

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.

## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### Town of Plympton – Limited to 1 Group 4 Employee

| Actives              |          | Retirees               |          |
|----------------------|----------|------------------------|----------|
| Number of Members    | 1        | Number of Members      | 1        |
| Average Service      | 27.5     | Average Age            | 55.1     |
| Average Compensation | \$51,740 | Average Annual Benefit | \$41,302 |

|   | As Actives | As Retirees |
|---|------------|-------------|
| Total Regular Compensation                    | \$51,740   | N/A         |
| Total Normal Cost                             | \$8,900    | N/A         |
| Employee Contributions                        | \$3,700    | N/A         |
| Net Employer Normal Cost                      | \$5,200    | N/A         |
| Actuarial Liability (as of December 31, 2002) | \$322,200  | \$456,400   |

|   |           |
|---|-----------|
| Increase in Actuarial Liability (as of December 31, 2002)             | \$134,200 |
| Amortization of Increase for FY05 (assumed average payment October 1) |           |
| 15 year level basis   | \$17,200  |

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.



## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### Town of Rochester – Limited to 3 Group 1 and 1 Group 4 Employees

| Actives              |          | Retirees               |          |
|----------------------|----------|------------------------|----------|
| Number of Members    | 4        | Number of Members      | 4        |
| Average Service      | 15.7     | Average Age            | 59.4     |
| Average Compensation | \$35,578 | Average Annual Benefit | \$12,454 |

|   | As Actives | As Retirees |
|---|------------|-------------|
| Total Regular Compensation                    | \$142,300  | N/A         |
| Total Normal Cost                             | \$33,200   | N/A         |
| Employee Contributions                        | \$11,700   | N/A         |
| Net Employer Normal Cost                      | \$21,500   | N/A         |
| Actuarial Liability (as of December 31, 2002) | \$386,600  | \$620,300   |

|   |           |
|---|-----------|
| Increase in Actuarial Liability (as of December 31, 2002)             | \$233,700 |
| Amortization of Increase for FY05 (assumed average payment October 1) |           |
| 15 year level basis   | \$29,900  |

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.

## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### Town of Wareham

| Actives              |          | Retirees               |          |
|----------------------|----------|------------------------|----------|
| Number of Members    | 28       | Number of Members      | 28       |
| Average Service      | 21.8     | Average Age            | 61.3     |
| Average Compensation | \$29,788 | Average Annual Benefit | \$17,887 |

|   | As Actives  | As Retirees |
|---|-------------|-------------|
| Total Regular Compensation                    | \$834,100   | N/A         |
| Total Normal Cost                             | \$79,200    | N/A         |
| Employee Contributions                        | \$45,700    | N/A         |
| Net Employer Normal Cost                      | \$33,500    | N/A         |
| Actuarial Liability (as of November 30, 2002) | \$4,141,900 | \$5,447,300 |

|   |             |
|---|-------------|
| Increase in Actuarial Liability (as of November 30, 2002)             | \$1,305,400 |
| Amortization of Increase for FY05 (assumed average payment October 1) |             |
| 15 year level basis   | \$168,300   |

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.

## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### Bridgewater Housing Authority – Limited to 2 Employees

| Actives              |          | Retirees               |          |
|----------------------|----------|------------------------|----------|
| Number of Members    | 2        | Number of Members      | 2        |
| Average Service      | 15.7     | Average Age            | 62.2     |
| Average Compensation | \$32,191 | Average Annual Benefit | \$14,638 |

|   | As Actives | As Retirees |
|---|------------|-------------|
| Total Regular Compensation                    | \$64,400   | N/A         |
| Total Normal Cost                             | \$8,600    | N/A         |
| Employee Contributions                        | \$4,700    | N/A         |
| Net Employer Normal Cost                      | \$3,900    | N/A         |
| Actuarial Liability (as of November 30, 2002) | \$242,300  | \$324,400   |

|   |          |
|---|----------|
| Increase in Actuarial Liability (as of November 30, 2002)             | \$82,100 |
| Amortization of Increase for FY05 (assumed average payment October 1) |          |
| 15 year level basis   | \$10,600 |

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.

## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### Bridgewater-Raynham Regional School – Limited to 10 Employees

| Actives              |          | Retirees               |          |
|----------------------|----------|------------------------|----------|
| Number of Members    | 10       | Number of Members      | 10       |
| Average Service      | 23.5     | Average Age            | 60.5     |
| Average Compensation | \$30,592 | Average Annual Benefit | \$16,527 |

|   | As Actives  | As Retirees |
|---|-------------|-------------|
| Total Regular Compensation                    | \$305,900   | N/A         |
| Total Normal Cost                             | \$30,100    | N/A         |
| Employee Contributions                        | \$19,000    | N/A         |
| Net Employer Normal Cost                      | \$11,100    | N/A         |
| Actuarial Liability (as of November 15, 2002) | \$1,514,400 | \$1,867,000 |

|   |           |
|---|-----------|
| Increase in Actuarial Liability (as of November 15, 2002)             | \$352,600 |
| Amortization of Increase for FY05 (assumed average payment October 1) |           |
| 15 year level basis   | \$45,600  |

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.

## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### East Bridgewater Housing Authority – Limited to 1 Employee

| Actives              |          | Retirees               |          |
|----------------------|----------|------------------------|----------|
| Number of Members    | 1        | Number of Members      | 1        |
| Average Service      | 9.0      | Average Age            | 66.4     |
| Average Compensation | \$34,020 | Average Annual Benefit | \$10,190 |

|   | As Actives | As Retirees |
|---|------------|-------------|
| Total Regular Compensation                    | \$34,020   | N/A         |
| Total Normal Cost                             | \$5,000    | N/A         |
| Employee Contributions                        | \$2,700    | N/A         |
| Net Employer Normal Cost                      | \$2,300    | N/A         |
| Actuarial Liability (as of December 31, 2002) | \$76,400   | \$124,600   |

|   |          |
|---|----------|
| Increase in Actuarial Liability (as of December 31, 2002)             | \$48,200 |
| Amortization of Increase for FY05 (assumed average payment October 1) |          |
| 15 year level basis   | \$6,200  |

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.

## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### Middleboro Housing Authority

| Actives              |          | Retirees               |         |
|----------------------|----------|------------------------|---------|
| Number of Members    | 1        | Number of Members      | 1       |
| Average Service      | 10.8     | Average Age            | 55.9    |
| Average Compensation | \$20,002 | Average Annual Benefit | \$4,924 |

|   | As Actives | As Retirees |
|---|------------|-------------|
| Total Regular Compensation                    | \$20,002   | N/A         |
| Total Normal Cost                             | \$2,900    | N/A         |
| Employee Contributions                        | \$1,500    | N/A         |
| Net Employer Normal Cost                      | \$1,400    | N/A         |
| Actuarial Liability (as of December 31, 2002) | \$53,800   | \$67,900    |

|   |          |
|---|----------|
| Increase in Actuarial Liability (as of December 31, 2002)             | \$14,100 |
| Amortization of Increase for FY05 (assumed average payment October 1) |          |
| 15 year level basis   | \$1,800  |

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.

## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### Onset Fire District

| Actives              |          | Retirees               |          |
|----------------------|----------|------------------------|----------|
| Number of Members    | 1        | Number of Members      | 1        |
| Average Service      | 31.7     | Average Age            | 59.3     |
| Average Compensation | \$45,316 | Average Annual Benefit | \$34,051 |

|  | As Actives | As Retirees |
|--|------------|-------------|
| Total Regular Compensation                     | \$45,316   | N/A         |
| Total Normal Cost                              | \$3,100    | N/A         |
| Employee Contributions                         | \$3,800    | N/A         |
| Net Employer Normal Cost                       | (\$600)    | N/A         |
| Actuarial Liability (as of September 30, 2002) | \$270,600  | \$362,000   |

|   |          |
|---|----------|
| Increase in Actuarial Liability (as of September 30, 2002)            | \$91,400 |
| Amortization of Increase for FY05 (assumed average payment October 1) |          |
| 15 year level basis   | \$11,900 |

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.

## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### Plymouth County Mosquito Control

| Actives              |          | Retirees               |          |
|----------------------|----------|------------------------|----------|
| Number of Members    | 2        | Number of Members      | 2        |
| Average Service      | 25.8     | Average Age            | 63.0     |
| Average Compensation | \$59,746 | Average Annual Benefit | \$36,803 |

|   | As Actives | As Retirees |
|---|------------|-------------|
| Total Regular Compensation                | \$119,500  | N/A         |
| Total Normal Cost                         | \$12,500   | N/A         |
| Employee Contributions                    | \$6,800    | N/A         |
| Net Employer Normal Cost                  | \$5,700    | N/A         |
| Actuarial Liability (as of July 15, 2002) | \$570,500  | \$734,300   |

|   |           |
|---|-----------|
| Increase in Actuarial Liability (as of July 15, 2002)                 | \$163,800 |
| Amortization of Increase for FY05 (assumed average payment October 1) |           |
| 15 year level basis   | \$21,800  |

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.



## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### Scituate Housing Authority – Limited to 2 Employees

| Actives              |          | Retirees               |          |
|----------------------|----------|------------------------|----------|
| Number of Members    | 2        | Number of Members      | 2        |
| Average Service      | 24.5     | Average Age            | 61.0     |
| Average Compensation | \$40,467 | Average Annual Benefit | \$28,071 |

|   | As Actives | As Retirees |
|---|------------|-------------|
| Total Regular Compensation                    | \$80,900   | N/A         |
| Total Normal Cost                             | \$7,900    | N/A         |
| Employee Contributions                        | \$5,400    | N/A         |
| Net Employer Normal Cost                      | \$2,500    | N/A         |
| Actuarial Liability (as of November 30, 2002) | \$456,300  | \$595,600   |

|   |           |
|---|-----------|
| Increase in Actuarial Liability (as of November 30, 2002)             | \$139,300 |
| Amortization of Increase for FY05 (assumed average payment October 1) |           |
| 15 year level basis   | \$18,000  |

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.

## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### Wareham Fire District

| Actives              |          | Retirees               |          |
|----------------------|----------|------------------------|----------|
| Number of Members    | 1        | Number of Members      | 1        |
| Average Service      | 27.4     | Average Age            | 56.1     |
| Average Compensation | \$48,570 | Average Annual Benefit | \$39,897 |

|   | As Actives | As Retirees |
|---|------------|-------------|
| Total Regular Compensation                    | \$48,570   | N/A         |
| Total Normal Cost                             | \$8,600    | N/A         |
| Employee Contributions                        | \$3,200    | N/A         |
| Net Employer Normal Cost                      | \$5,400    | N/A         |
| Actuarial Liability (as of December 31, 2002) | \$306,400  | \$430,800   |

|   |           |
|---|-----------|
| Increase in Actuarial Liability (as of December 31, 2002)             | \$124,400 |
| Amortization of Increase for FY05 (assumed average payment October 1) |           |
| 15 year level basis   | \$15,900  |

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.

## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### Whitman Housing Authority

| Actives              |          | Retirees               |          |
|----------------------|----------|------------------------|----------|
| Number of Members    | 1        | Number of Members      | 1        |
| Average Service      | 26.1     | Average Age            | 71.1     |
| Average Compensation | \$32,994 | Average Annual Benefit | \$27,384 |

|   | As Actives | As Retirees |
|---|------------|-------------|
| Total Regular Compensation                    | \$32,994   | N/A         |
| Total Normal Cost                             | \$0        | N/A         |
| Employee Contributions                        | \$0        | N/A         |
| Net Employer Normal Cost                      | \$0        | N/A         |
| Actuarial Liability (as of November 30, 2002) | \$206,400  | \$239,100   |

|   |          |
|---|----------|
| Increase in Actuarial Liability (as of November 30, 2002)             | \$32,700 |
| Amortization of Increase for FY05 (assumed average payment October 1) |          |
| 15 year level basis   | \$4,200  |

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.

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## EFFECT ON FUNDING SCHEDULE

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### Amortization of the Increase in Actuarial Accrued Liability

The bottom section of the cost page for each governmental unit shows the amortization of the increase in actuarial accrued liability on a 15-year, level amortization basis. This basis requires an annual funding amount of \$615,800 from FY05 through FY19. The allocation to each governmental unit is summarized below. Future system appropriations will reflect these unit costs.

| <b>Governmental Unit</b>            | <b>Level, 15-year<br/>Effective FY05</b> |
|-------------------------------------|--|
| Town of Bridgewater                 | \$103,600                                |
| Town of Carver                      | \$136,200                                |
| Town of Hanson                      | \$24,600                                 |
| Town of Plympton                    | \$17,200                                 |
| Town of Rochester                   | \$29,900                                 |
| Town of Wareham                     | \$168,300                                |
| Bridgewater Housing Authority       | \$10,600                                 |
| Bridgewater-Raynham Regional School | \$45,600                                 |
| East Bridgewater Housing Authority  | \$6,200                                  |
| Middleboro Housing Authority        | \$1,800                                  |
| Onset Fire District                 | \$11,900                                 |
| Plymouth County Mosquito Control    | \$21,800                                 |
| Scituate Housing Authority          | \$18,000                                 |
| Wareham Fire District               | \$15,900                                 |
| Whitman Housing Authority           | \$4,200                                  |
| <b>Total</b>                        | <b>\$615,800</b>                         |

The legislation did not specify how the increased cost should be amortized under the schedule. The Board indicated that the ERIP will be funded on a 15-year level basis.

### Decrease in Normal Cost

There is a decrease in employer normal cost for all units of approximately \$163,600 in FY03 for retiring members since normal cost accrues only for active members. This decrease is only expected to last a few years (the period the member would have remained in service if the ERIP were not implemented). This decrease will be partially offset by the normal cost for any members hired to replace retiring members. Any decrease in employer normal cost will be reflected in future actuarial valuations and corresponding funding schedules. We have not estimated the normal cost for new hires as part of this study.

# ACTUARIAL ASSUMPTIONS

Actuarial Cost Method                      Entry Age Normal

Investment Return                              8.5% per year

Interest Rate credited to the  
Annuity Savings Fund                      3.5% per year

Assumed rate of Cost of Living  
Increases (COLA)                              3% per year

Mortality                                      RP- 2000 Healthy Annuitant table (gender distinct). This is applicable to both pre-retirement and post-retirement benefits. For disabled members, the mortality rate is assumed to be in accordance with the RP- 2000 Table (gender distinct) set forward 3 years for males. It is assumed that 55% of pre-retirement deaths are job-related for Group 1 and 2 members and 90% are job-related for Group 4 members. For members retired under an Accidental Disability, 40% of deaths are assumed to be from the same cause as the disability.

Salary Increase                              Based on an analysis of past experience. Annual rates are shown below.

| Service | Group 1 | Group 2 | Group 4 |
|---------|---------|---------|---------|
| 0       | 7.00%   | 7.00%   | 8.00%   |
| 1       | 6.50%   | 6.50%   | 7.50%   |
| 2       | 6.50%   | 6.50%   | 7.00%   |
| 3       | 6.00%   | 6.00%   | 6.50%   |
| 4       | 6.00%   | 6.00%   | 6.00%   |
| 5       | 5.50%   | 5.50%   | 6.00%   |
| 6       | 5.50%   | 5.50%   | 5.50%   |
| 7       | 5.00%   | 5.00%   | 5.50%   |
| 8       | 5.00%   | 5.00%   | 5.25%   |
| 9       | 4.75%   | 5.00%   | 5.25%   |
| 10+     | 4.75%   | 5.00%   | 5.25%   |

## ACTUARIAL ASSUMPTIONS *(continued)*

### Retirement

| Age | Groups 1 & 2 |        | Group 4 |
|-----|--------------|--------|---------|
|     | Male         | Female |         |
| 45  | 0.000        | 0.000  | 0.010   |
| 46  | 0.000        | 0.000  | 0.010   |
| 47  | 0.000        | 0.000  | 0.010   |
| 48  | 0.000        | 0.000  | 0.010   |
| 49  | 0.000        | 0.000  | 0.010   |
| 50  | 0.010        | 0.015  | 0.020   |
| 51  | 0.010        | 0.015  | 0.020   |
| 52  | 0.010        | 0.020  | 0.020   |
| 53  | 0.010        | 0.025  | 0.050   |
| 54  | 0.020        | 0.025  | 0.075   |
| 55  | 0.020        | 0.055  | 0.150   |
| 56  | 0.025        | 0.065  | 0.100   |
| 57  | 0.025        | 0.065  | 0.100   |
| 58  | 0.050        | 0.065  | 0.100   |
| 59  | 0.065        | 0.065  | 0.150   |
| 60  | 0.120        | 0.050  | 0.200   |
| 61  | 0.200        | 0.130  | 0.200   |
| 62  | 0.300        | 0.150  | 0.250   |
| 63  | 0.250        | 0.125  | 0.250   |
| 64  | 0.220        | 0.180  | 0.300   |
| 65  | 0.400        | 0.150  | 1.000   |
| 66  | 0.250        | 0.200  | 1.000   |
| 67  | 0.250        | 0.200  | 1.000   |
| 68  | 0.300        | 0.250  | 1.000   |
| 69  | 0.300        | 0.200  | 1.000   |
| 70  | 1.000        | 1.000  | 1.000   |

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## ACTUARIAL ASSUMPTIONS *(continued)*

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**Disability**      Based on an analysis of past experience. Sample annual rates are shown below.

| Age | <u>Groups 1 &amp; 2</u> | Group 4 |
|-----|-------------------------|---------|
| 20  | 0.00010                 | 0.0010  |
| 30  | 0.00030                 | 0.0030  |
| 40  | 0.00101                 | 0.0030  |
| 50  | 0.00192                 | 0.0125  |
| 60  | 0.00280                 | 0.0085  |

Based on an analysis of past experience. It is also assumed that the percentage of job-related disabilities is 55% for Groups 1 & 2 and 90% for Group 4.

### Withdrawal

Based on analysis of past experience. Annual rates are based on years of service. Sample annual rates for Groups 1 and 2 are shown below. For Group 4 members the rate is 0.015 each year for service up to and including 10 years. No withdrawal is assumed thereafter.

### Groups 1 & 2

| Service | Groups 1 & 2 |
|---------|--------------|
| 0       | 0.150        |
| 5       | 0.076        |
| 10      | 0.054        |
| 15      | 0.033        |
| 20      | 0.020        |

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